Artistry in Sound

ONKYO

TX-SV313PRO

Audio Video Control Tuner Amplifier

Instruction Manual

• Congratulations on your purchase of the ONKYO TX-SV313PRO Tuner-Amplifier. • Please read this manual thoroughly before making connections and turning power on. • Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new TX-SV313PRO. • Please retain this manual for future reference.

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CAUTION:

"TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL."

- The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

- The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

- For models having power cords with a polarized plug.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

- Sur les modèles dont la fiche est polarisée.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU AU FOND.

Important safeguards

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING

S3125A

7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Polarization** – If the appliance is provided a polarized plug having on blade wider than the other, please read the following information: The polarization of the plug is a safety feature. The polarized plug will only fit the outlet one way. If the plug does not fit fully into the outlet, try reversing it. If there is still trouble, the user should seek the services of a qualified electrician. Under no circumstances should the user attempt to defeat the polarization of the plug.
12. **Power-Cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** – An outdoor antenna should be located away from power lines.
15. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

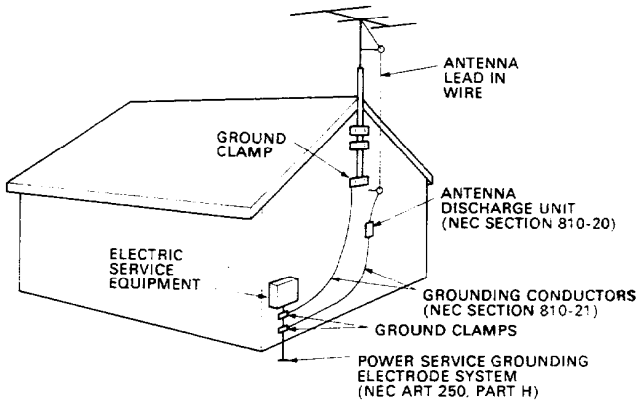
16. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

17. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.

18. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

19. **Outdoor Antenna Grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of the antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 73.1.

FIGURE 73.1:
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC – NATIONAL ELECTRICAL CODE
S2898A

'cautions

1. **Warranty Card**
   The serial number is written on the rear panel of this unit. Copy the serial number and model number onto your warranty card and keep it in a safe place.

2. **Recording Copyright**
   Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

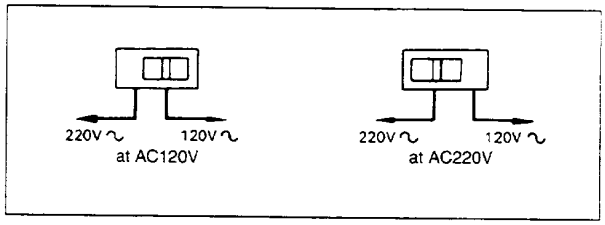
3. **AC Fuse**
   The fuse is located inside the chassis and is not user serviceable. If power does not come on, contact your ONKYO service center.

4. **Care**
   From time to time you should wipe off the front and rear panels and the cabinet with a soft cloth. For heavier dirt, dampen a soft cloth in a weak solution of mild detergent and water or a mild ammonia cleaner, wring it out dry, and wipe off the dirt. Following this, dry immediately with a clean cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since these could damage the finish or remove the panel lettering.

5. **Power**
   WARNING
   BEFORE TURNING ON POWER FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

- Some models are designed for use only with the power supply voltage of the region where they are sold.
  U.S.A. and Canadian models: AC120V, 60 Hz
  Worldwide models: 120 and 220V switchable, 50/60 Hz

- **Voltage Selector (Rear Panel)**
  Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver to the right or left.
  Confirm that the switch has been moved all the way to the right or left before turning the power switch on. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.



- **Tuning Step Frequency Switch (Bottom)**
  Worldwide models are equipped with a switch that controls the AM (9 kHz/10 kHz) band tuning steps.
  Be sure to set this switch to match the tuning step frequency in your area.

Features

- **Plenty of Clean Power**
  Continuous power rated at 60w/ch into 8 ohms with no more than 0.08% THD in stereo mode (front), 15 watts (center) and 15w/ch to the rear gives you enough power to handle today's digital sources easily.
- **Discrete Output Stage**
  Instead of off-the-shelf IC power amplifier circuitry used in some mid-class amplifiers, each of your TX-SV313PRO's front channels has its own discrete power amplifier to ensure clean sound from any source.
- **Dolby Pro-Logic Surround Sound System**
  Creates a multi-dimensional soundstage with better channel separation, localization, imaging, and gives you dialogue that comes directly from center stage. And with built-in auto input balance, sound from the L/R channels always compliments each other. The result is sound effects comparable to that of high-class theaters.
- **Direct Access Tuning**
- **40-Station Random Preset Tuning**
- **Six-Class Classified Memory**
- **Connection Facilities for Two Video Components**
- **Selective Tone Control**
- **RI Compatible Remote Control Included**

Explanation

Surround System

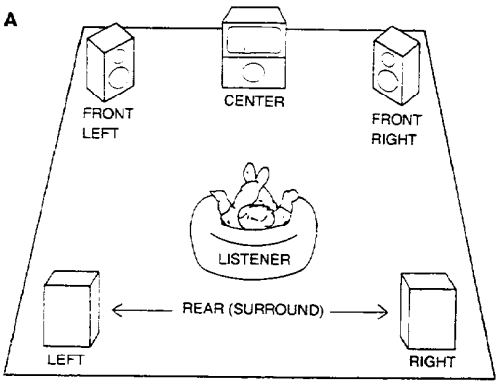
Many motion pictures produced in the last decade have been released in "Dolby Stereo" sound, with music, dialogue, and panned effects coming from the 3-channel front soundstage, and surround effects and ambience emmanating from the sides and rear of the theater. These four channels are encoded, or matrixed, into a two-channel DOLBY STEREO release, and decoded in the theater by a professional DOLBY STEREO MP (Motion Picture) decoder. These surround sound effects are "hidden' in the two-channel stereo movie release, and decoded in the theater by special Dolby equipment.

These same two-channel motion picture masters are used for production of stereo VHS, VHS-Hi-Fi, Beta Hi-Fi, and stereo Laser Vision discs that you can buy or rent at your video store. The TX-SV313PRO incorporates the Dolby Pro Logic Surround Circuit, which is designed to emulate the audience experience found in DOLBY STEREO theaters. Like DOLBY SURROUND, DOLBY PRO LOGIC SURROUND is capable of creating a multi-dimensional soundstage, but with the increased channel separation it gives a far greater sense of "movement" and sound localization. Just like in the theater, the addition of the active center channel ensures that all audience members hear dialogue coming from its on-screen sources regardless of seating position.

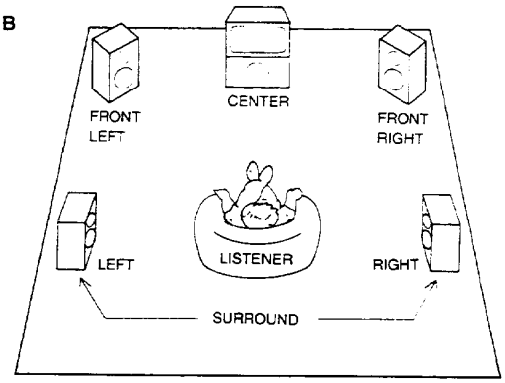
Since the TX-SV313PRO is equipped with a front amplifier, center amplifier and a rear (surround) amplifier, Dolby Pro Logic Surround effects can all be produced. You can enjoy the feeling of a movie theater in your own room. To reproduce these effects, rear (surround) speakers and center speakers are necessary. The placement of these speakers is important. You can experiment with various positions and locations to find the best placement for optimum sound quality in your room.

Examples of Speaker Placement

A



B



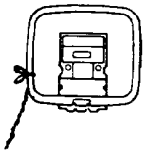
With the rear (surround) speakers facing the wall, the reverberation effect amplifies the "surround" effect for a more "live" sound. Try it and see!

- **Dolby Pro Logic Surround**
  When using video cassette tapes or video discs that have the DOLBY STEREO or DOLBY SURROUND trade mark, you can achieve the same kind of sound in your room that you experience in a movie theater.
  In the Dolby Pro Logic Surround mode, three modes are available according to the type of center speaker used.
  1. Normal: When a small speaker is used on the center channel, signals of 100 Hz or more are output from the center speaker, and signals of 100 Hz or less are split between the front L and R channels.
  2. Wide band: When the center speaker is approximately the same size as the left and right front speakers, it operates throughout the full frequency range.
  3. Phantom: When no center speaker is used, the center channel signal is split between the front L and R speakers, producing the same results as found with a center speaker.

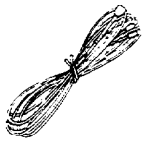
Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Before using this unit

1. Supplied Accessories

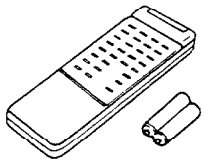


AM loop antenna × 1



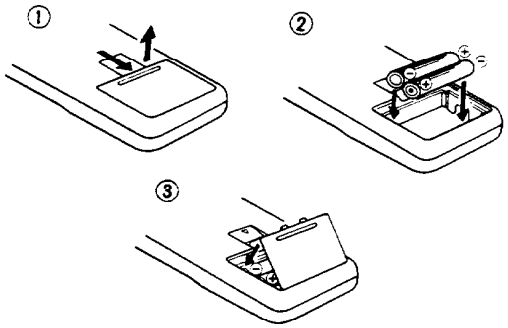
T-shaped FM antenna × 1

RI remote control cable × 1



Remote control transmitter × 1
Batteries × 2

2. Transmitter Battery Insertion



Precautions when using batteries

- The remote control transmitter is powered by two batteries. Before using this unit for the first time, insert the two batteries (included) as shown in the diagram.
- Average battery life is about one year. This period may be shorter depending on the frequency of use and environment (temperature and humidity) in which the remote control transmitter is used.
- If the remote control transmitter does not operate even though front panel controls function normally, the batteries should be replaced. Use only batteries listed in the following chart.

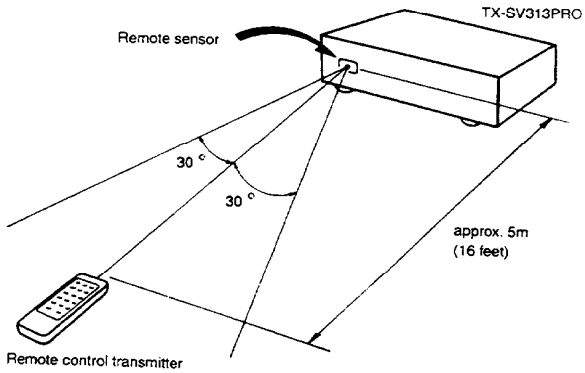
Type	Voltage	Size
Manganese	1.5V	AA R6 UM-3

NOTES:

1. Do not leave an expired battery in the case as it may leak or damage the battery case.
2. When inserting the batteries, be sure the (+) and (–) ends are properly aligned.
3. Do not use nickel-cadmium (rechargeable) batteries.
4. Do not use one specified (manganese) battery and one alkaline Battery at the same time.
5. Replace both batteries at once; do not use one old and one new battery together.

Using the remote control transmitter

1. The batteries of the remote control transmitter must be replaced periodically.
2. This unit uses infrared rays. Therefore, commands may not be received properly if the front panel of this unit is exposed to bright light. To prevent this from occurring, place this unit so that it is not directly exposed to bright light.
3. If this unit is placed inside an audio rack behind a glass door, the door should not have colored glass or have any decorations on it, since this could shorten the range or prevent commands from being received.
4. The transmitter operates up to a distance of about five meters (16 feet). The transmitting window must always be pointed at the reception window when a command is sent to the TX-SV313PRO.
5. If this remote control transmitter does not operate properly, confirm that the batteries are not dead. If the problem persists, contact your ONKYO Service Center.



System connections

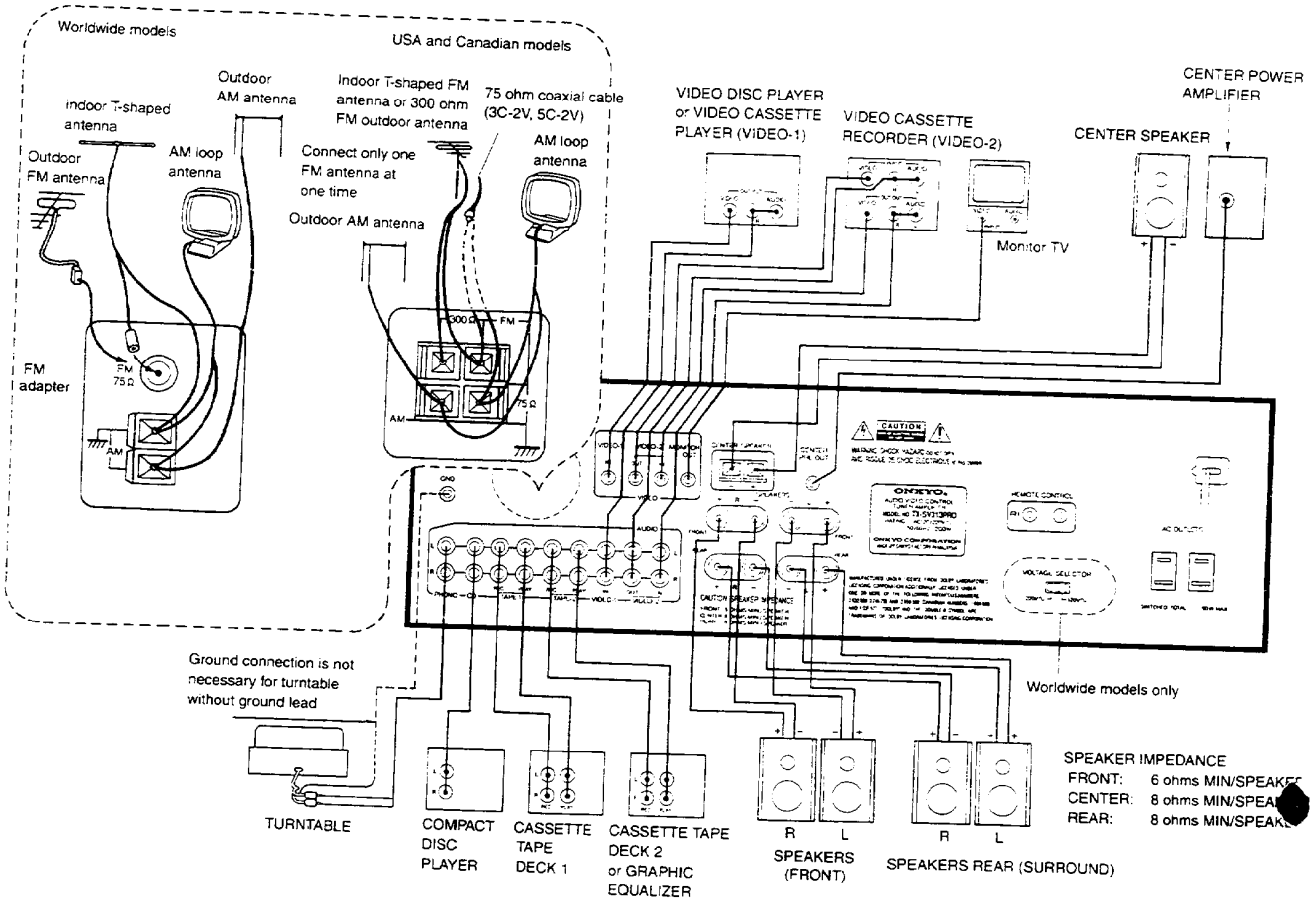
Do not plug in the cord until all connections have been made.

General

Always make sure that you connect the left and right channels correctly. Terminals on equipment and cables, when color-coded, usually employ the convention of red for the right channel. (Red=Right)

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Antenna Connections

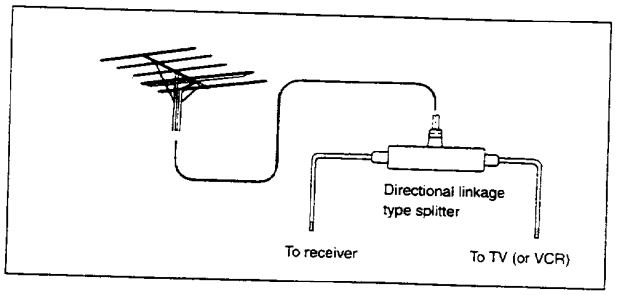


FM Antenna Connections

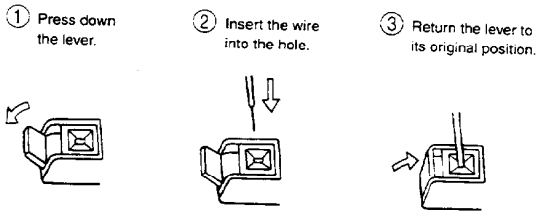
Use the T-shaped antenna if you live in an area where signal strength of FM broadcasts is high. Connect the antenna to the FM 300 ohms terminals and place the antenna on a wall or other surface in the position in which reception is best. If signal strength is low in your area, use a multi-element FM outdoor antenna and connect to this unit using a 75 ohm coaxial cable because this type of cable is more resistant to interference than 300 ohm cable. Consult your ONKYO authorized service center about the right type of antenna for your area.

NOTE:

Do not use the same antenna for both FM and TV (or VCR) reception since the FM and TV (or VCR) signals can interfere with each other. If you must use a common FM/TV (or VCR) antenna, use a directional linkage type splitter.

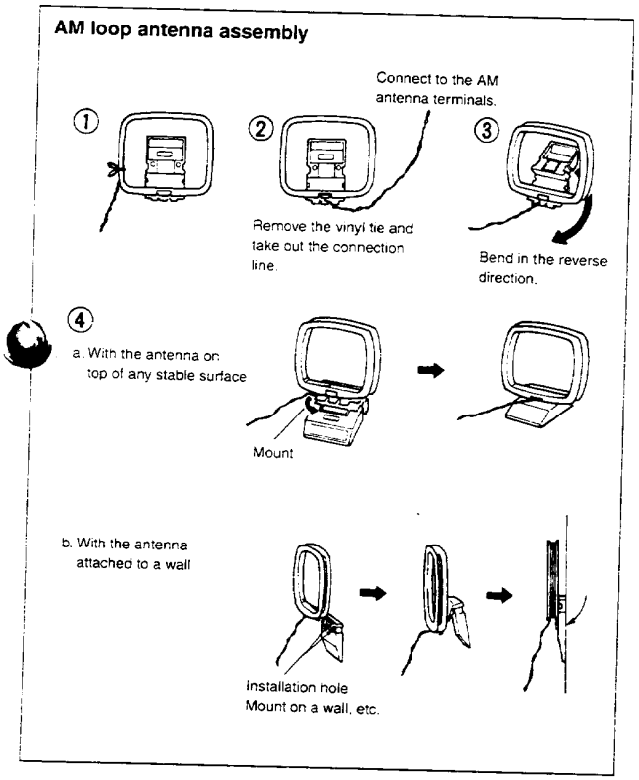


Antenna and Speaker (CENTER) Connections



AM Antenna Connections

An AM loop antenna is included in the installation instructions bag. Take out the connection line and connect it to the AM antenna terminals. This loop antenna can be placed on top of any stable surface or attached to a wall. Try several positions to determine which gives the best reception. Be sure the antenna is not near a speaker, power cord, television set, VCR, or motorized appliances. When using an external AM antenna, do not remove the loop antenna; connect both antennas to the AM antenna terminals.


AM loop antenna assembly
Connect to the AM antenna terminals.
①
②
③
Remove the vinyl tie and take out the connection line.
Bend in the reverse direction.
④
a. With the antenna on top of any stable surface
Mount
b. With the antenna attached to a wall
installation hole
Mount on a wall, etc.

NOTE:

AM reception is easily affected by television sets and VCRs. Therefore, AM reception may be poor if this unit is placed too close to a TV or a VCR.

Speaker Connections (SPEAKERS)

1. Connect the speakers to "FRONT" and/or "REAR" terminals. The center speaker should be connected to CENTER terminals.
2. When connecting speakers, proper polarity is important. Always connect the (+) terminal (red) on this equipment to the (+) terminal on the speaker and the (–) terminal (black) on this equipment to the (–) terminal on the speaker.
3. Do not connect a single speaker in parallel to the right and left channel outputs.
4. Use speaker cables that have a low impedance and that are as short as possible.

- Attach speaker cables to the rear panel speaker terminals with care, being sure that connections are made firmly and that there is no possibility of a short circuit occurring.

Compact Disc Player or Other Component Connections (CD)

Connect the output of the CD player or an additional audio component to the CD jacks. An ONKYO CD player with remote control that has the RI mark can be operated by the TX-SV313PRO. (Please refer to "Connections for Remote Control".) For more details, refer to your CD player instruction manual.

Turntable Connections (PHONO)

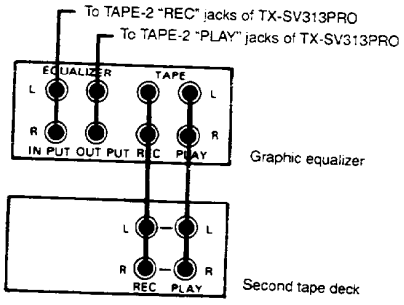
Connect the output of the turntable to the PHONO jacks. Be sure to connect the ground (earth) lead wire from the turntable to the ground terminal (GND). Lack of proper ground connection will cause hum. Turntables not provided with GND wires do not need to be connected.

1. Place the turntable on a firm shelf or deck free from vibrations (especially those generated by the speaker system). If the turntable is permitted to pick up such unwanted vibrations, not only with the performance of the unit drop, but distortion in the bass frequencies and howling in the speakers may also occur.
2. Check the turntable instruction manual for any other precautions.
3. The loud noises that occur when connecting and disconnecting, replacing the cartridge or lowering the tonearm could damage the speakers. Always turn the power switch off before making connections.

Tape Deck and Graphic Equalizer Connections (TAPE-1, TAPE-2)

1. This unit has facilities for two tape decks. If you are using only one tape deck, connect it to the TAPE-1 jacks. If you have two tape decks, connect one to the TAPE-1 jacks and the other to the TAPE-2 jacks.
2. Connect the output of the tape decks to the TAPE-1 and TAPE-2 "PLAY" jacks. Connect the input of the tape decks to the TAPE-1 and TAPE-2 "REC" jacks of the unit. For more details, refer to your tape deck instruction manual.
3. To connect a graphic equalizer, too, use the TAPE-2 jacks and connect the second tape deck to the tape jacks of the equalizer. (See the figure)

To connect a graphic equalizer and second tape deck to the TAPE-2 jacks.



4. If you have an ONKYO tape deck with the RI remote control jack, connect it to the TAPE-1 jacks. Please refer to the section "Connections for Remote Control" regarding connection of the remote control cable.

Video Disc Player (or Video Cassette Player) Connections (VIDEO-1)

Connect the VIDEO output of the video disc player to the TX-SV313PRO (VIDEO) VIDEO-1 "IN" jack and the AUDIO output to the (AUDIO) VIDEO-1 "IN" jack. The VIDEO-1 jack is only for playback, there is no OUT jack. For more details, refer to the video disc player instruction manual.

Video Cassette Recorder Connections (VIDEO-2)

1. Connect the VIDEO output of the VCR to the rear panel (VIDEO) VIDEO-2 "IN" jack and the VIDEO input of the VCR to the rear panel (VIDEO) VIDEO-2 "OUT" jack. Then connect the AUDIO output of the VCR to the (AUDIO) VIDEO-2 L and R "IN" jacks. Finally, connect the AUDIO input of the VCR to the (AUDIO) VIDEO-2 L and R "OUT" jacks.
2. When using a playback-only VCR, only the output connections need to be performed.
3. For more details, refer to the VCR instruction manual.

TV Connections (MONITOR)

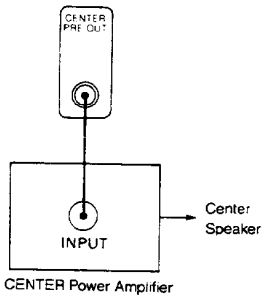
1. Connect the TV VIDEO input to the TX-SV313PRO MONITOR "OUT". jack. There is no need to perform an audio connection since sound will be sent directly from the TX-SV313PRO to the speaker systems.
2. The TX-SV313PRO does not have an RF converter. Therefore, it can be used with only a monitor TV equipped with a video input jack.
3. Since the television set, tuner (FM/AM) section of this unit can cause interference that may disrupt sound and/or picture quality, the TV and TX-SV313PRO and their respective connection should be placed as far apart as possible. The use of a common TV/FM antenna is not recommended (see antenna section).

AC Outlets

- **SWITCHED:**
  These outlets are switched on and off by the Power button on the front panel and remote control transmitter. Capacity is total 90 watts.

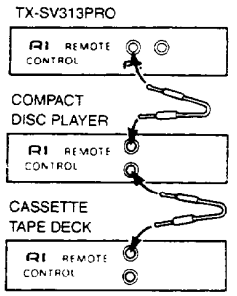
Amplifier Connections

- **CENTER PRE OUT jack**
  During surround operations, when a center power amplifier is used for the Center speaker, make the connections at the TX-SV313PRO CENTER PRE OUT jack, and the !NPUT jack on the power amplifier.



Connections for Remote Control (REMOTE CONTROL)

- A cassette tape deck, and compact disc player, that have the ONKYO RI mark can be operated using the accessory remote control transmitter with the TX-SV313PRO.



Connect a remote control cable to the black jack with the RI mark.

An RI remote control cable equipped with a 1/8" (3.5mm) diameter miniature two-conductor phone plug is attached to the TX-SV313PRO and to CD player, with the RI mark.

To use an ONKYO compact disc player and cassette tape deck with the RI mark, insert the accessory remote control cable plug into the REMOTE CONTROL jack. As far as connecting sequence is concerned, it doesn't matter whether the cable is connected from the TX-SV313PRO to the cassette tape deck or to the compact disc player. The remote control transmitter is operated by facing it towards the remote control sensor of the TX-SV313PRO.

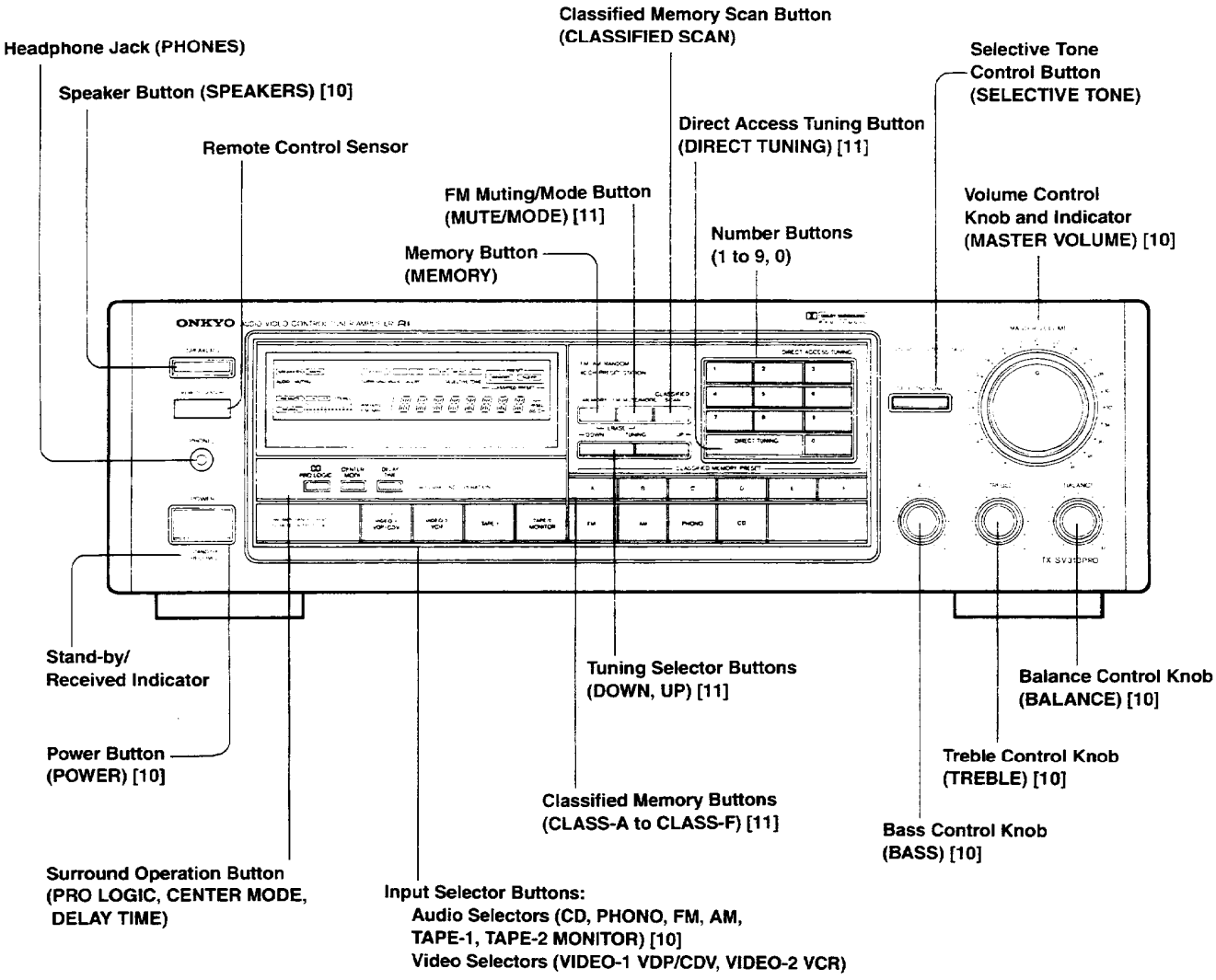
NOTES:

- To enable remote control operation, the audio connection cables and the remote control cable should be connected between the units.
- The remote control of the TX-SV313PRO cannot be used to operate an ONKYO turntable.

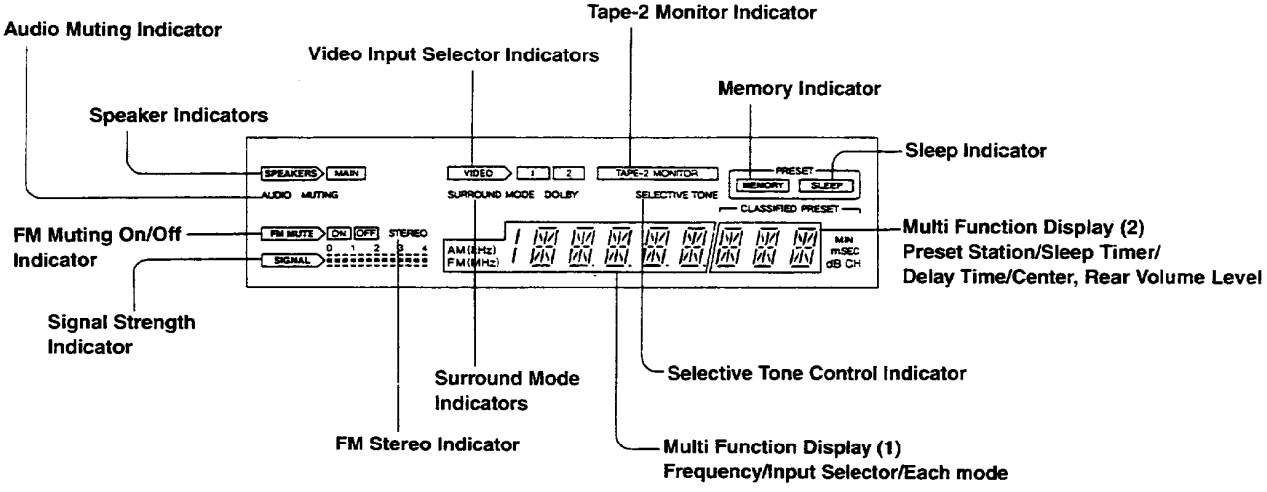
Control positions and names

Front panel

For more information about buttons or controls, turn to the page number listed in the [ ].


Classified Memory Scan Button (CLASSIFIED SCAN)
Headphone Jack (PHONES)
Selective Tone Control Button (SELECTIVE TONE)
Speaker Button (SPEAKERS) [10]
Direct Access Tuning Button (DIRECT TUNING) [11]
Remote Control Sensor
FM Muting/Mode Button (MUTE/MODE) [11]
Volume Control Knob and Indicator (MASTER VOLUME) [10]
Number Buttons (1 to 9, 0)
Memory Button (MEMORY)
Stand-by/ Received Indicator
Tuning Selector Buttons (DOWN, UP) [11]
Balance Control Knob (BALANCE) [10]
Power Button (POWER) [10]
Treble Control Knob (TREBLE) [10]
Classified Memory Buttons (CLASS-A to CLASS-F) [11]
Bass Control Knob (BASS) [10]
Surround Operation Button (PRO LOGIC, CENTER MODE, DELAY TIME)
Input Selector Buttons:
Audio Selectors (CD, PHONO, FM, AM, TAPE-1, TAPE-2 MONITOR) [10]
Video Selectors (VIDEO-1 VDP/CDV, VIDEO-2 VCR)

Display and indicators


Audio Muting Indicator
Tape-2 Monitor Indicator
Video Input Selector Indicators
Memory Indicator
Speaker Indicators
Sleep Indicator
FM Muting On/Off Indicator
Multi Function Display (2) Preset Station/Sleep Timer/ Delay Time/Center, Rear Volume Level
Signal Strength Indicator
Surround Mode Indicators
Selective Tone Control Indicator
FM Stereo Indicator
Multi Function Display (1) Frequency/Input Selector/Each mode

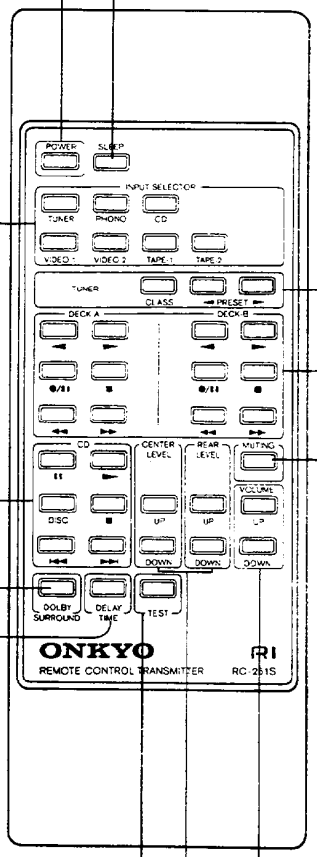
Remote control transmitter RC-251S

Sleep button (SLEEP)
Press to set the power off timer. The sleep timer is a function which button off the power to the system from the time it is set. When this button is pressed, "90 MIN" is displayed for 5 seconds, and the power goes off 90 minutes later. Each time the button is pressed during 5 seconds, the timer setting changes, by 10 minute intervals, such as 80, 70, 60 .... While the sleep timer is operating, the SLEEP indicator is lighted. If the sleep button is pressed during this time, the amount of time remaining on the sleep timer is displayed, and if the button is pressed during that display, 10 minutes will be subtracted from that time.
If the button is pressed when the panel display shows 10 minutes or less, the sleep timer is cancelled, and the power is not turned off.

Power Button (POWER)

Input Selector Buttons (CD, PHONO, TUNER, VIDEO-1, VIDEO-2, TAPE-1, TAPE-2)
- When the TUNER button is pressed, the station which was received previously is recalled. Selection of AM or FM should be done on the main unit.

CD Operation Buttons (CD)
These buttons are used to operate an ONKYO CD player with the RI mark.
- ► : Press this button to play the CD player.
- ❚❚ : Press this button to pause the CD play back. To resume disc play, press the PLAY button.
- DISC : Press to use for sequential selection of discs in the order they were loaded on the CD changer.
- ■ : Press this button to stop the CD player.
- ⏮ : Press this button to go back to the beginning of the current track and again to skip back to the previous track.
- ⏭ : Press this button to skip to the next track.



Tuner Operation Buttons (TUNER)
CLASS : Class selector button
◄ PRESET ► : Preset memory DOWN/UP buttons

Tape Operation Buttons (DECK-A, DECK-B)
These buttons control ONKYO double cassette tape decks that can be remote controlled. Use the DECK-B buttons to control single cassette tape decks with the RI mark.
- ●/❚❚ : When this is pressed, the recording stand-by mode is entered.
- ◄ : The tape plays, moving from right to left, or, in the recording stand-by mode, recording begins.
- ■ : Interrupts all operations.
- ► : The tape plays, moving from left to right, or, in the recording stand-by mode, recording begins.
- ◄◄ : Fast forward from right to left.
- ►► : Fast forward from left to right.

Dolby Pro Logic Surround Button (DOLBY SURROUND)

Delay Time Button (DELAY TIME)

Test Tone Button (TEST)
This operates when Dolby Surround mode has been selected as the SURROUND MODE. Pink noise is produced in order to match the volume levels used by the Front, Center, and Rear speakers. Please follow the procedure described above to do this matching. Press the TEST button again after finishing adjustment.

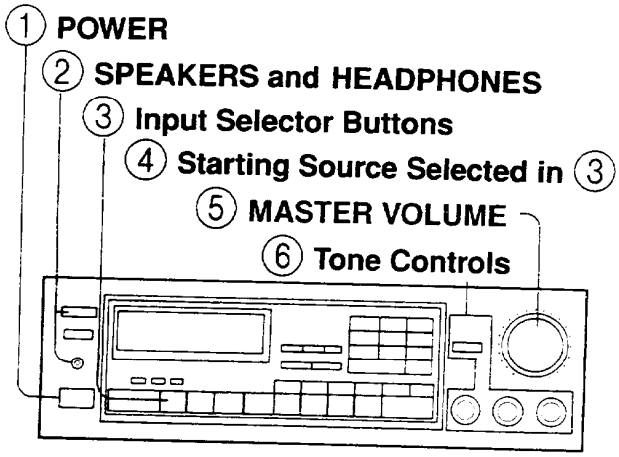
Center Level Up/Down Buttons (CENTER LEVEL UP/DOWN)
Rear Level Up/Down Buttons (REAR LEVEL UP/DOWN)
These buttons are used to adjust the volume in the Surround mode. Every time one of the buttons is pressed, the display shows the level for two seconds. For the Surround mode, the indication for the center or rear ranges from the minimum of (-- oo dB), –67, –66 ... 0, +1, ... to the maximum of (+12dB). Indications include CENT for center, REAR for rear. These level settings can be memorized.

Audio Muting Button (MUTING)
This button temporarily switches off the sound from the speaker or headphone. Pressing this button will operate the TX-SV313PRO audio muting circuit. The audio muting indicator "MUTING" will flash. Pressing the button again or using the POWER button on the remote control transmitter to turn the power on will turn off the audio muting.

Volume Buttons (UP/DOWN)

Operations

To listen to your favorite Source



① Press the POWER button to turn on the power.
② Press the SPEAKERS button. The MAIN indicator on the display will light up.
When using headphones, use the jack located under the SPEAKERS button. Stereo headphones with a standard binaural plug can be connected here. (Sound from the front speakers is output.) The sound from the headphones in the Surround Mode may be different from that which is obtained from speakers. The sound in the headphones may seem relatively far-away.
③ Press one of the desired Input Selector button (CD, PHONO, FM AM, TAPE-1, TAPE-2 MONITOR, VIDEO-1, 2).
Make sure that the connections between the input sources are correct.
- The button pressed is shown in display. For FM or AM, the band and the frequency are shown in display.
- Confirm that the TAPE-2 MONITOR indicator is off when a source other than the TAPE-2 has been selected. Also check the audio muting is off.

④ Start play of the selected input source.
- Follow the operating instructions of that unit.
- If FM or AM is selected, please refer to the section "Tuner Reception".

⑤ Adjust the MASTER VOLUME Control knob to the appropriate level.
⑥ Adjust the Tone Controls to obtain the desired tone setting.

NOTE:

After selecting VIDEO-1 or VIDEO-2, you can display the images of the selected video source while listening to the sound of another source. (CD, TUNER, PHONO, TAPE-1 or 2) In such case, the setting of the video selector button is indicated by the lit video input selector indicator.

Memory Preservation
This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in in order to charge the back-up system.
The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged. This period is shorter when the unit is exposed to a highly humid climate.

Explanation of the buttons

■ **Power button (POWER) and Stand-by/Received indicator**
The Stand-by/Received indicator comes on when the AC power cord for this unit has been inserted in an outlet. This indicates that the TX-SV313PRO is standing by for operation. Pressing the POWER button or remote control POWER button, the main unit will come on, and power will be supplied from the AC outlet to the rear panel. This indicator then goes off. The indicator also lights when a signal is received from the remote control unit.

■ **Speaker button (SPEAKERS) and indicator**
Use this button to turn the speakers (FRONT, CENTER, REAR) ON or OFF which are connected to the TX-SV313PRO. When the Speaker button is ON, the MAIN indicator will light.

■ **Master Volume Control Knob (MASTER VOLUME)**
Use the MASTER VOLUME control knob to adjust the volume of the front, rear (surround), center speakers, center pre out level at the same time. Turn clockwise to increase the volume level. The volume can be adjusted manually and by the remote control transmitter's volume UP/DOWN buttons. When adjusted by remote control, the volume knob rotates along with the volume indicator on the knob. Volume for the center or rear speaker is controlled by using the CENTER LEVEL UP/DOWN or REAR LEVEL UP/DOWN buttons on the remote control transmitter.

Tone Controls

■ **Bass Control Knob (BASS)**
Adjust to strengthen or weaken bass response. (Not effective for the rear and center speakers.)

■ **Treble Control Knob (TREBLE)**
Adjust to strengthen or weaken treble response. (Not effective for the rear and center speakers.)
* TREBLE and BASS are effective for the L and R of the front speakers. The best effect from DOLBY PRO LOGIC SURROUND can be obtained when equal settings are used for the sound from the L/R front speakers and the sound from the center speaker for the middle and treble ranges.

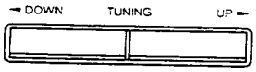
■ **Balance Control Knob (BALANCE)**
Use the Balance Control Knob (BALANCE) to adjust the relative volume levels of the left and right speaker systems. This adjusts the relative volume level of the front speaker systems.

■ **Selective Tone Control button (SELECTIVE TONE) and indicator**
Switching on this button lights up the indicator and creates a clear reproduction quality of the ultra low frequencies and high frequencies. (Affects the L/R speakers and center speaker.)

Tuner Reception

Press the FM or AM Input Selector button and make sure that the TAPE-2 MONITOR indicator is off and audio muting is off.

■ Tuning with the TUNING buttons

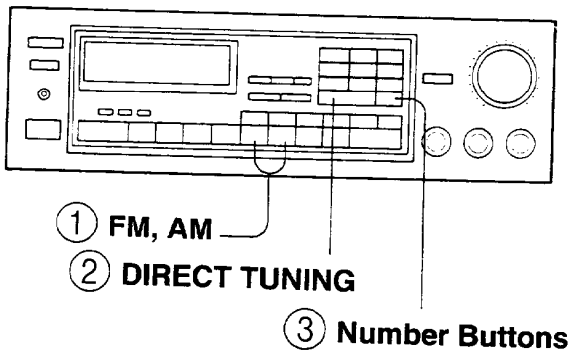


To tune in an FM or AM station not stored in the memory, press one of the Tuning selector buttons. If you press UP, the frequency is increased. Pressing DOWN decreases. Note that the frequency is changed in 100(50)kHz steps in FM and 10(9)kHz steps in AM when the Tuning selector button is pressed in single steps. If this button is pressed continuously for more than 0.5 seconds, the auto tuning mode is entered, and frequencies are scanned automatically. When a broadcast signal is received, scanning stops and that frequency is displayed. If a different frequency is desired, press the button once again.

- Scanning will not stop for broadcasts weak enough to be suppressed by the muting circuit. To receive a weak FM broadcast, set the MUTE/MODE button to the OFF position and select the frequency of the desired broadcast station.

■ Receiving a station by inputting the frequency for the station directly (Direct Tuning)

If the frequency for the desired station is known, input the frequency number directly.



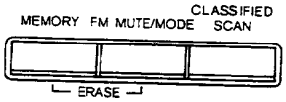
① Press the AM or FM button of the Input selector buttons.
② Press the DIRECT TUNING button.
- "-" will flash for 16 seconds in the Frequency display.

③ Input the desired frequency number by using the Number buttons while the cursors are flashing. For instance, if you wish to receive the station of 88.1 (88.10) MHz, press the Number buttons, 8, 8 and 1 (8, 8, 1 and 0).
(The number in ( ) indicates that 50kHz steps are used.)

- When receiving AM broadcast with a 9kHz step, use the same procedure as described in step ③ above. With 10kHz steps, inputting a number to the 10kHz digit will set the 1kHz digit automatically to 0.
- If the desired frequency set in this operation does not exist, the frequency which is the nearest and lower than the desired frequency will be received. If the frequency set is not in the receive frequency range, the frequency flashes for two seconds and then the previous frequency will be displayed.
- If a wrong frequency has been set, press the DIRECT TUNING button and start again.

■ How to use the FM Muting/Mode button (MUTE/MODE)

In the Muting ON (STEREO) setting, FM stereo reception is possible and the muting circuit suppresses interstation noise and weak FM stations. In the OFF (MONO) setting, interstation noise will be heard and even weak FM stations can be received. (Muting/Mode operation is effective for only FM reception.)



- The Stereo indicator will light up if the broadcast is being received in stereo. The Stereo indicator will not light up if the broadcast is monaural or too weak to be received in Stereo.

Classified Memory Function

The memory can be divided (classified) for different users or programs of stations.

NOTE:

There are times when frequencies are left in the machine's memory from the final testing done prior to shipment. If this is the case with your TX-SV313PRO, cancel unnecessary preset stations according to "How to cancel memorized stations" and memorize desired frequencies.

■ How to classify stations

With this model, six classes (CLASS A to F) are available and stations can be memorized in any class. A total of 40 stations can be memorized in classes from A to F. Although the same station can be memorized in different classes, the memory number for the station will differ depending on the order in which the station is memorized in the classes.

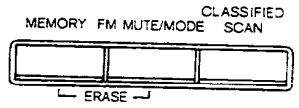
① Tune in the desired station (see section on "Tuner Reception").
② Press the MEMORY button.
- The MEMORY indicator will flash for 8 seconds.

③ Press the desired Classified Memory button (one of buttons A to F).
- The station is memorized in the selected class with the memory number which is the smallest of the unoccupied numbers in the class.

By repeating the operations above, up to 40 stations can be memorized. If an attempt is made to memorize 41 stations or more, "FULL" will be displayed indicating that no more stations can be memorized.

■ **How to cancel memorized stations**

Retrieve the class number you want to cancel (see "How to retrieve memorized stations") and then press the MUTE/MODE button while holding down the MEMORY button. Another station can be memorized with the memory number which has been cancelled.



■ **How to retrieve memorized stations**

① Press the Classified Memory button for the desired class. If remote control is used, the class next to the present one is retrieved when the CLASS button is pressed.
- The memory number (station) which was being received before the class is retrieved will be received.

② There are several methods to proceed after the above operations are carried out. Use any of the following methods.

a. Pressing the same Classified Memory button again permits the next preset memory number (station) to be received.

b. Input the memory number you wish to receive by using the Number buttons.
- If the memory number consists of 2 digits, input two numbers, immediately one after the other. For instance, when inputting "15", "15" will not be registered if you wait more than one second before inputting "5", resulting in only "1" being registered.
- If a number other than a number from 1 to 40, or a number which has not been memorized is input, the number flashes for 2 seconds and then the number which was displayed before will be displayed.
- If a number between 1 and 4 is pressed, the display and station are changed 1 second later.

c. Press the CLASSIFIED SCAN button
- Stations memorized in the present class will be scanned in a order and the corresponding memory number will flash in the Preset station display at each scan. After the last memory number of the class is reached, scanning starts again from the first memory number of the class. Pressing the CLASSIFIED SCAN button again stops scanning.

d. When the PRESET UP or DOWN button of the remote controller is pressed, the memory number of the class currently being received will be incremented or decremented. Keeping pressing the button increments or decrements continuously. After the maximum or minimum number is reached, the next class or one before the present class will be entered.

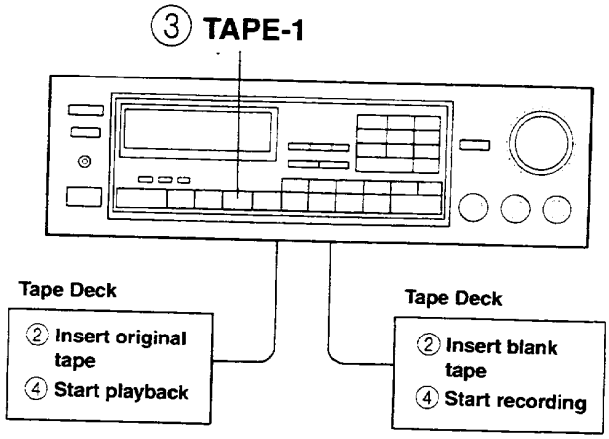
Tape Recording

■ **Tape Recording**

① Make all connections between the tape deck and the unit as shown in the System Connections Diagram.
② Radio: Press the FM or AM button.
Record: Press the PHONO Input Selector button.
CD: Press the CD Input Selector button.
③ Put the tape deck in the recording mode. The recording can be monitored through the speakers or headphones as desired.
For TAPE-2, turn on the corresponding Tape Monitor button to hear the signal that, having been recorded, is returned from the deck to the TX-SV313PRO. (if the deck has the three heads.)
④ Set the proper recording level using the controls on the tape deck used for recording. Also, during recording and dubbing operations, never change the positions of any controls (bass, treble, etc.) on this unit.

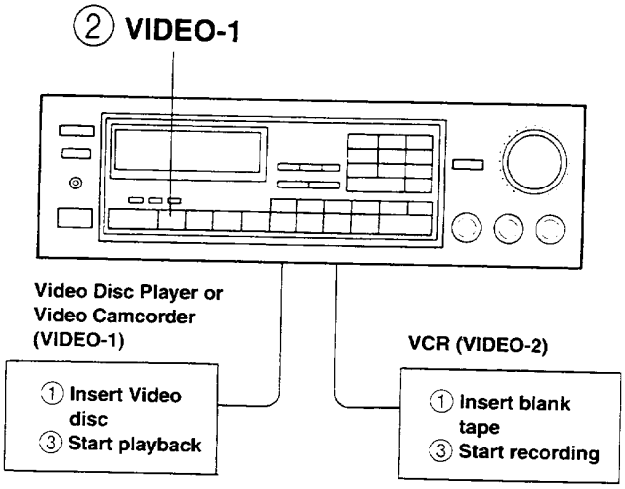
Tape-to-Tape Dubbing

① Connect the two tape decks to this unit as shown in the System Connections diagram.
② Load the original tape in deck1 and the blank tape in deck2.
③ Press the TAPE-1 Input Selector Button.
④ Put tape deck1 in the playback mode and tape deck2 in the recording mode.
⑤ The source signal can be monitored through the speakers or headphones, when the TAPE-2 MONITOR button is in the OFF position. If tape deck2 has three heads, the just-recorded signal can be monitored (when the TAPE-2 MONITOR button is in the ON position). Refer to the tape deck instruction manuals for more details.



■ **Using the Graphic Equalizer**

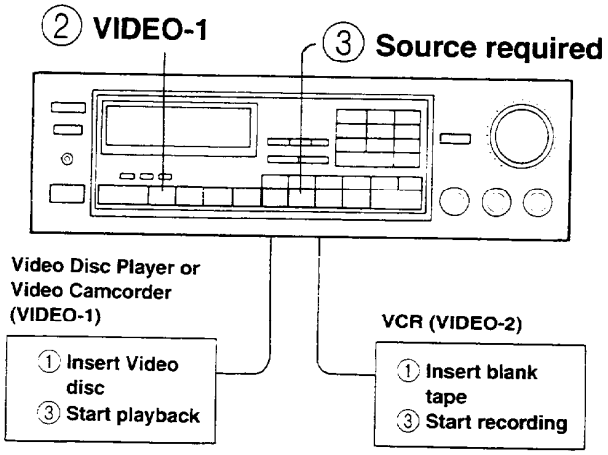
① Connect the graphic equalizer to the TAPE-2 jacks on the rear panel.
② If a second tape deck is used, connect it to the tape jacks on the graphic equalizer.
③ Press the TAPE-2 MONITOR button.
- Follow the graphic equalizer operating instructions.
- To record an equalizer signal, use tape deck 2 (connected to the equalizer) for recording.



■ **Video Disc Player (or Video Camcorder) to VCR recording**

Video disc programs can be recorded onto a VCR (VIDEO-2)

① Load a disc in the video disc player, and a blank tape in the VCR (VIDEO-2).
② Press the VIDEO-1 input selector button.
③ Begin playback of the video disc player and recording of the VCR.



■ **When you want to transfer video pictures from VIDEO-1 to VIDEO-2 while recording sound from another source onto VIDEO-2**

① Load a disc in a video disc player, or insert a tape in a video cassette player or a video camcorder, then insert a blank tape in the VCR (VIDEO-2).
② Press the VIDEO-1 button. The VIDEO-1 indicator will light.
③ Select the sound source you want to record (CD, TUNER etc.) using the Input Selector button.
④ Begin playback of the video connected to the VIDEO-1 and also start the sound source, then start recording on the VIDEO-2 VCR.

- Refer to the video disc player, video camcorder or VCR instruction manuals for additional information.

Operation of Dolby Pro Logic Surround

■ **Dolby Pro Logic Surround ON/OFF button (DD PRO LOGIC) and indicators**

When you are playing a sound source with the DOLBY SURROUND trademark, press the DOLBY PRO LOGIC button. The DOLBY indicator will light. You can also use the DOLBY SURROUND button on the remote controller.

Turn this feature off (the indicator will go out) when playing material without the DOLBY SURROUND trademark. When this feature is off, no sound will be produced from the CENTER and REAR speakers.

■ **Delay Time button (DELAY TIME) and indicator**

You can change the delay time for the sound from the rear (surround) speakers. Pressing this button changes the delay time every 5 msec during a period of 15 to 30 msec in Dolby Pro Logic Surround.

This condition is shown in numeric values on the display.

Dolby Surround delay time is specified at 20msec. It is recommended that initial Dolby Surround delay be set at 20msec, and adjustment to either 15 or 30 is possible via the control. By adjusting the delay time, and carefully adjusting Master Volume Level, Center Volume Level and Rear Volume Level, the apparent acoustic size of your listening room can be enlarged or reduced. Adjustable delay time allows you to tailor the acoustic size of your listening environment to match the sonic characteristics of the audio program. This operation can also be performed using the delay time button of the remote control transmitter.

NOTE:

If you are in surround and change the delay time, but the rear (surround) speakers are not connected, nothing will happen. However, even under these conditions, each time the delay time button is pressed, front speaker muting will occur and sound will disappear momentarily. This is not a malfunction.

■ **Center Mode button and indicator (CENTER MODE)**

To use Dolby Pro Logic Surround the Center Mode button should be set in accordance with the size or the availability of a center speaker. One of the following modes, displayed by the indicator, may be used:

NORMAL : For a center speaker with a small enclosure.
WIDE BAND : For a center speaker similar to the left and right stereo speakers.
PHANTOM : When a center speaker is not used.

■ **Adjusting the Dolby Pro Logic Surround Level**

All the operations can be controlled by the remote control transmitter. Functions No. ④ to ⑥ are operated only by the remote control transmitter.

① Select a source encoded with Dolby Surround.
② Use the SURROUND MODE button to select Dolby Surround mode.
③ Next, use the MASTER VOLUME to set the volume to the desired listening position.
④ Press the TEST button on the remote control transmitter.
- "*TEST*" will appear on the display, and pink noise will be output for 1.5 seconds from each of the Left, Center, Right, and Rear (in that order) speakers. When the CENTER MODE is PHANTOM, this will be output in the following order: Left, Left + Right, Right, and Rear.

⑤ Use the remote control CENTER LEVEL UP/DOWN button to adjust the volume of the center speaker, and REAR LEVEL UP/DOWN button to adjust the volume of the rear speakers to the same level as that of the left and right front speakers.
⑥ Press the TEST button to cancel the pink noise.

Troubleshooting guide

Trouble	Cause	Remedy
No power.	• Power cord is disconnected. • There is external noise in the computer circuits of the TX-SV313PRO. • AC fuse blown.	• Connect power cord. • Turn the power button off and then on again or remove the AC plug from the outlet and then plug it again. • Contact your ONKYO service center.
Power but no sound.	• Tape monitor switch on. • Audio muting switch on. • Bad connections. • Amplifier protection circuitry has been activated.	• Switch to off. • Switch to off by remote control transmitter • Check connections, speaker leads, etc. • Contact your ONKYO service center.
Hum, low-frequency noise.	• Poor or no input ground. • Poor or no phono motor ground. • The placement of the audio connection cable on the rear panel is not correctly adjusted.	• Check outer conductor of input plugs. • Check for proper ground connection. • Adjust the placement of the cable to reduce hum.
Howling when the volume is turned up.	• Turntable and speakers are too close together.	• Move them farther apart.
Rough or scratchy sound. High range is not clear.	• Stylus of pick-up is worn. • Stylus tip is dirty. • Treble control too high.	• Replace. • Clean. • Turn treble control down.
AM stations cannot be received.	• AM loop antenna is not attached.	• Connect the included AM loop antenna to the AM antenna terminals.
Buzzing noise on AM (particularly conspicuous at night or with weak stations).	• Noise from electrical apparatus such as fluorescent lamp.	• Move AM loop antenna to different position. • Set up outdoor AM antenna.
High-pitched noise or buzzing noise on TV.	• Noise from TV set.	• Place the AM loop antenna as far as possible from the TV. • Move unit away from TV set.
Crackling noise on AM, FM.	• Noise caused by turning fluorescent lamp on and off. • Noise from automobile ignition.	• Move antenna as far as possible from the fluorescent lamp. • Install an FM outdoor antenna as far as possible from the road. • Change the position or direction of the outdoor antenna.
FM stereo indicator lights but sound is distorted and stereo separation is bad.	• Station is too strong. • Multiple reflection of the radio waves because of tall buildings or mountains.	• Change to T-shaped antenna. • Use antenna which has better directivity and select a point where the distortion is least.
FM Signal Strength indicators and stereo indicator flicker and hiss is heard on FM.	• Station is too weak. • Stereo FM broadcasts cover only about half the distance of an ordinary broadcast.	• Install an outdoor FM antenna. • Change the position or direction of the outdoor antenna.
No station is recalled when a preset key is pressed.	• The power cord has been unplugged for a long time.	• The memory contents are lost. Store all stations again.
Front panel controls function but remote control transmitter does not.	• No batteries in remote control transmitter. • Batteries have worn out.	• Insert batteries. • Replace batteries.
Also refer to the respective instruction manuals of the video disc player, video cassette recorder, TV monitor, etc., being used.		

The tuning steps by which the tuned frequency changes on each band have been set at the factory to the proper value for the country where each unit is to be sold. If you use the unit in a country where a different tuning step is required or if the broadcast frequencies in your country change so that you can not tune in radio stations precisely, contact your authorized ONKYO Service Center.

NOTES:

- This device employs a microcomputer to perform various operations. If interference generated by an external power supply, radio waves, or other electrical source results in an accident which causes the specified operations and functions to operate abnormally, to perform a reset please follow the procedure below.
  1. Press and hold down the MEMORY button, then press the POWER button.
  2. The "TEST" indicator will light up for approximately 3 seconds.
  3. Unplug the AC cord while the "TEST" indicator is lit. "CLEAR" will appear on the display. All preset memory will be initialized.
- If a problem occurs, first operate the unit using the front panel controls to confirm that it is not due to a malfunction (or worn out batteries) of the remote control transmitter.

Specifications

AMPLIFIER SECTION

Power Output:
Stereo mode
Front L/R channels
60 watts per channel min. RMS. at 8 ohms, both channels driven, 1,000 Hz with no more than 0.08 % total harmonic distortion.
Surround mode
Front L/R channels
55 watts per channel min. RMS. at 8 ohms both channels driven, 1,000 Hz with no more than 0.08 % total harmonic distortion.
Center and Rear channels
15 watts per channel min. RMS. at 8 ohms 1,000 Hz with no more than 0.8 % total harmonic distortion.

Total Harmonic Distortion: 0.08 % at rated power (FRONT L/R)
IM Distortion: 0.08 % at rated power (FRONT L/R)
Damping Factor: 60 at 8 ohms (FRONT L/R)
Sensitivity and Impedance:
Phono: 2.5 mV/50 kohms
CD/Tape Play: 150 mV/50 kohms
Tape Rec: 150 mV/2.2 kohms
Pre-out (CENTER): 1V, 2.2 kohms
Phono Overload: 120mV RMS. at 1,000 Hz, 0.08 % THD.
Frequency Response: 20 to 30,000 Hz, +/–1 dB
RIAA Deviation: 20 to 20,000 Hz, +/–0.8 dB
Tone Control:
BASS: +/–10 dB at 100 Hz
TREBLE: +/–10 dB at 10,000 Hz
Signal to Noise Ratio:
PHONO: 80 dB (IHF A, 5 mV input)
CD/TAPE: 100 dB (IHF A)
Muting: – ∞ dB

VIDEO SECTION

Signal sensitivity and impedance
VDP/VCR normal input, output: 1 Vp-p, 75 ohms

TUNER SECTION

FM:

Tuning Range:
U.S.A. & Canadian models:
87.5 — 108.0 MHz (100 kHz steps)
worldwide models
87.50 — 108.00 MHz (50 kHz steps)
Usable Sensitivity:
Mono: 11.2 dBf, 2.0 µV
Stereo: 17.2 dBf, 4.0 µV
50dB Quieting Sensitivity:
Mono: 17.2 dBf, 4.0 µV
Stereo: 37.2 dBf, 40 µV
Capture Ratio: 1.5 dB
Image Rejection Ratio: 40 dB
IF Rejection Ratio: 90 dB
Signal-to-Noise Ratio:
Mono: 73 dB
Stereo: 67 dB
Alternate Channel Attenuation: 55 dB
AM Suppression Ratio: 50 dB
Total Harmonic Distortion:
Mono: 0.15 %
Stereo: 0.25 %
Frequency Response: 30 — 15,000 Hz +/–1.5 dB
Stereo Separation: 45 dB at 1 kHz/30 dB at 100 — 10,000 Hz
Muting Level: 17.2 dBf, 4 µV

AM:

Tuning Range:
U.S.A. & Canadian models:
530 — 1710 kHz (10 kHz steps)
worldwide models
531 — 1602 kHz (9 kHz steps)
Usable Sensitivity: 30 µV
Image Rejection Ratio: 40 dB
IF Rejection Ratio: 40 dB
Signal-to-Noise Ratio: 40 dB
Total Harmonic Distortion: 0.7 %

GENERAL

Power Supply:
U.S.A. and Canadian models: AC120V, 60 Hz
Worldwide models: 120 and 220V switchable, 50/60 Hz
Dimensions (W x H x D): 455 x 150 x 332 mm
17-15/16" x 5-7/8" x 13-1/16"
Weight: 10.1 kg (22.3 lbs)

Specifications and features are subject to change without notice.

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